

Appln No. 09/575,124
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Response to Office action of January 15, 2004

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

60. (Previously presented) A method of producing a surface having a region, the method including the steps of:

(a) defining coded data, the coded data being comprised of a plurality of codewords and being indicative of:

a region identity associated with the region; and

a plurality of points within the region;

(b) disposing the coded data within a region on the surface in the form of a plurality of sets of symbols, each set of symbols corresponding to a one of the plurality of codewords and

wherein the step of disposing includes interleaving on the surface the symbols of each set with at least one symbol of at least another set of the plurality of sets of symbols.

61. (Original) A method according to claim 60, wherein the region is identified with sufficient precision to distinguish the region from 1.5×10^{14} other regions.

62. (Original) A method according to claim 60, wherein the coded data includes at least one tag, each tag being indicative of the region identity and the position of the tag within the region.

63. (Original) A method according to claim 60, including the step of providing a substrate defining the surface.

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64. (Original) A method according to claim 60, wherein the substrate is laminar.
65. (Original) A method according to claim 62, wherein step (b) includes the sub-step (b)(i) of disposing the tags in a regular array within the region.
66. (Original) A method according to claim 65, wherein the sub-step (b)(i) includes the sub-step of disposing the tags in a rectangular array within the region.
67. (Original) A method according to claim 65, wherein the sub-step (b)(i) includes the sub-step of disposing the tags in a triangular array within the region.
68. (Original) A method according to claim 65, wherein step (b)(i) includes the sub-step of tiling the tags over the region.
69. (Original) A method according to claim 62, further including the step of adding a common feature to the tags in addition to the identity data.
70. (Original) A method according to claim 69, wherein the common feature is configured to assist location and/or recognition of the tags by associated tag reading apparatus.
71. (Original) A method according to claim 70, wherein the common features are represented in a format incorporating redundancy of information.
72. (Original) A method according to claim 62, further including the step of providing each of the tags with at least one orientation feature for enabling an orientation of the tag being read to be ascertained.

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73. (Original) A method according to claim 72, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.
74. (Original) A method according to claim 62, wherein each tag includes a plurality of tag elements, the identity data being defined by a plurality of the elements.
75. (Previously presented) A method according to claim 62, wherein step (b) includes the sub-step of disposing the tags on the surface such that the relative spacing of tag centres is less than about 12mm.
76. (Original) A method according to claim 75, wherein the relative spacing is less than about 3mm.
77. (Original) A method according to claim 75, wherein the relative spacing is less than about 1mm.
78. (Original) A method according to claim 62, wherein the tags are positioned stochastically within the region.
79. (Previously presented) A method according to claim 62, wherein the tags are substantially uniformly distributed within the region.
80. (Original) A method according to claim 60, wherein the region is defined as the entire surface.
81. (Original) A method according to claim 62, wherein the tags are disposed at predetermined positions on the surface.

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82. (Original) A method according to claim 62, wherein each of the tags includes at least one common feature in addition to the identity data.

83. (Original) A method according to claim 82, wherein the at least one common feature is configured to assist finding and/or recognition of the tags by associated tag reading apparatus.

84. (Original) A method according to claim 82, wherein the at least one common feature is represented in a format incorporating redundancy of information.

85. (Original) A method according to claim 82, wherein the at least one common feature is rotationally symmetric so as to be rotationally invariant.

86. (Original) A method according to claim 82, wherein the at least one common feature is ring-shaped.

87. (Original) A method according to claim 62, wherein each of the tags includes at least one orientation feature for enabling a rotational orientation of the tag being read to be ascertained.

88. (Original) A method according to claim 87, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.

89. (Original) A method according to claim 88, wherein the at least one orientation feature is rotationally asymmetric.

90. (Previously presented) A method according to claim 88, wherein the at least one orientation feature is skewed along a major axis.

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91. (Original) A method according to claim 62, wherein each of the tags includes at least one perspective feature for enabling a perspective distortion of the tag being read to be ascertained.
92. (Original) A method according to claim 91, wherein the at least one perspective feature includes at least four sub-features which are not coincident.
93. (Original) A method according to claim 62, wherein each tag includes a plurality of tag elements, the identity data being defined by a plurality of the elements.
94. (Original) A method according to claim 93, wherein the tag elements are disposed in at least one arcuate band around a central region of each tag.
95. (Original) A method according to claim 94, wherein there are a plurality of the arcuate bands disposed concentrically with respect to each other.
96. (Original) A method according to claim 95, wherein each element takes the form of a dot having a plurality of possible values.
97. (Original) A method according to claim 96, wherein the number of possible values is two.
98. (Original) A method according to claim 96, wherein when representing one of the possible values, the tag elements absorb, reflect or fluoresce electromagnetic radiation of a predetermined wavelength or range of wavelengths to a predetermined greater or lesser extent than the surface.
99. (Original) A method according to claim 96, wherein the possible values of the tag elements are defined by different relative absorption, reflection or fluorescence of electromagnetic radiation of a predetermined wavelength or range of wavelengths.

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100. (Original) A method according to claim 96, wherein the tags are not substantially visible to an average unaided human eye under daylight or ambient lighting conditions.
101. (Original) A method according to claim 96 wherein the tags are slightly visible to an average unaided human eye under daylight or ambient lighting conditions.
102. (Original) A method according to claim 96, wherein the tags are visible to an average unaided human eye under daylight or ambient lighting conditions.
103. (Original) A method according to claim 60, wherein the region identity is represented in a format incorporating redundancy of information.
104. (Original) A method according to claim 62, wherein the tags are printed onto the surface by means of a printer.
105. (Original) A method according to claim 104, wherein the printer is an ink printer.
106. (Original) A method according to claim 105, wherein the tags are printed using ink that is absorbent or reflective in the ultraviolet spectrum or the infrared spectrum.
107. (Original) A method according to claim 104, wherein the printer also prints additional information onto the surface.
108. (Original) A method according to claim 107, wherein the additional information is printed onto the surface using colored or monochrome inks.
109. (Original) A method according to claim 108, wherein the additional information is printed onto the surface using one of the following combinations of colored inks:

CMY;

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CMYK;

CMYRGB; and

spot colour.

110. (Original) A method according to claim 60 wherein any 10 millimetre diameter subregion of the region includes sufficient coded data to identify the region.

111. (Original) A method according to claim 110, wherein any 10 millimetre diameter subregion of the region includes sufficient information to identify at least one point of the region.

112. (Previously presented) A region according to any one of claims 60 to 64 or 67, wherein the coded data is machine readable, and the information represented by the coded data is substantially inscrutable to an unaided human.

113. (Cancelled)